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The Secretary read a paper by Thomas L. Cooke, Esq. of Parsonstown, on certain bronze relics found at Dowris, in the King's County, and exhibited to the Academy specimens and drawings of the various articles described.

“ On the 30th of November, 1848, the Rev. Dr. Robinson read an essay to the Royal Irish Academy, on the subject of certain bronze antiques found in the King's County, and of which a portion is in the possession of that scientific nobleman the Earl of Rosse.

“ In order to correct a few trifling mistakes and inadvertencies into which he has fallen, I have thought it right to place on record before the Academy some facts and circumstances I happen to be cognizant of, relative to the discovery of the bronze articles which formed the subject matter of Dr. Robinson's essay.

“ At the time the relics in question were found, I was resident in Parsonstown, distant about five miles from the site of the discovery. Having a desire to preserve the antiquities of the country, I did not rest until I became possessed of several of the articles found, and I at the moment collected all the information I could procure respecting the place, and other particulars of the finding. What I then and since have learned, I have embodied in the present communication.

“ Dr. Robinson has been inaccurately informed as to the time when the original discovery was made. It is much more than sixteen years since ; and I have reason to believe that it is even nearer to twenty-five than to twenty years ago.

“ Sixteen years have elapsed since the publication in the ‘ Dublin Penny Journal,’ vol. i. p. 376, of a paper of mine, in the first sentence of which I mentioned that the things therein enumerated were found (then, 1833), *a few years since*, near Birr. I cannot now find any entry or memorandum to enable me to fix the precise time. There, however, exists no doubt that it is more than twenty years ago. I suppose it to be about twenty-five years. One of the men that found

the relics is dead more than sixteen years. The inaccuracy of Dr. Robinson's informant as to the time of the discovery appears to be material in this inquiry, as affording an indication of the doubtful reliance to be placed on his memory in other and more interesting portions of the communication made by him.

“ With regard to the place where the discovery was made, I must remark, that it was not, as Dr. Robinson was informed, at Dowris-*Heath*, nor probably within a mile of it. It is quite true that the antiques were found on part of the extensive townland of Dowris, the situation of the greater part of which has been correctly stated to be on sheet 30 of the Ordnance Maps of the King's County. The relics in question were accidentally dug up by two persons, one of whom, Edward Hennessy, now deceased, was at that time sportsman to Mr. Drought of Whigsborough. The other man is living yet. They were at the time trenching potatoes on that part of Whigsborough known by the name of Derreens, and which lies between Whigsborough paddock wall and the water known by the name of Lough Cowr.

“ I have stated, that a person is yet living who was actually with Hennessy when the antiquities described in part by Dr. Robinson were found. A second person also still lives who was privy to their discovery. He accompanied me recently to the spot.

“ Having thus noticed the time and the actual place of finding the antiquities, I must go rather diffusely into a description of the several articles which were then found. Dr. Robinson was much misled in being brought to believe that the bronze vessel, in the possession of the Earl of Rosse, and its contents, were the only things discovered. There was at least a horse-load of gold-coloured bronze antiquities, of a variety of forms, exhumed at the time. Many of them are now in my collection, and I made presents of several of them to other collectors.

“The Dowris relics which fell into my hands, and of which I have sent specimens or drawings to be exhibited to the Academy, are as follow :

“No. 1. The vessel marked A, when found, was, as it now is, of a dark dingy colour, apparently caused by smoke or a deposition of carbon. It bears the marks of having been long in use, and is patched and mended with rivets in different places. Wherever its murky coating is removed, the metal of which this vessel is composed appears to be of the same golden hue as the other utensils found. This vessel had handles to it, but they were broken off by the persons who found it. Part of one of these handles is now in it.

“No. 2. is a portion of another vessel, marked B. It appears also to have been much used. It is much cleaner than the vessel marked A. Both vessels (more particularly that marked A) are composed of very thin and flexible sheets of bronze, not thicker than strong writing paper, which, being too slight to bear ordinary usage upon the fire, were fortified around the lag or junction of the sides and bottom with shields or protecting pieces of a stronger scantling, and apparently coarser metal. These shields are furrowed to prevent their slipping, and were originally riveted on the respective vessels. The bottom and several inches in height of the respective sides of both the vessels, A and B, have been hammered out of one continuous piece.

“I may here observe that brazen vessels were formerly esteemed of such great value in Ireland as to be considered worthy of being given and accepted as a fit tribute and donation to and by Irish kings and princes. Accordingly we find that Cathaoir-Mor bequeathed to Mogh-Corb fifty copper cauldrons, with other articles, some of which were made of gold, and all reckoned of great value. We also read in the Book of Rights that a cauldron was to be given as tribute to the king of Cashel by the king of Teamhair Luachra.

“The golden colour of the Dowris vessels well suited

them for presents to and from royalty ; and the high value of the material, in the estimation of the maker, is evidenced by the thinness of the sheets of which they are formed.

“ No. 3. A great number of gold-coloured skeynes, made of bronze, were found at Derreens, but it is to be regretted that the finders left scarcely one of them unbroken. The specimens marked C, D, and E, are of this class. It must be remarked here, that the metal of which these skeynes are composed was not brittle, for the ends of that marked C were bent together when it came into my possession, and I, without breaking, straightened it. Some of these skeynes had the rivets remaining in the handles : and the wooden handle was attached to one of them ; but it in a short time crumbled into dust.

No. 4. The gold-coloured bronze arrow-heads, or, as some suppose, razor blades, marked F. I had two more of these. One of them, represented of the true size in the drawing G, I gave away, but I know not what became of the third. The blade figured in the drawing had two parallel ribs running lengthwise on each side. I am not able to offer any opinion based on certainty as to the use of these instruments. The specimen marked E 2 was sent to me by one of the original discoverers of the bronze vessels, since the greater portion of this paper was written. He informs me that it remained about his house, and acquired the whitish colour in consequence of one of his children having put it into the fire. The heat very probably brought all the tin to the surface.

“ No. 5. Gold-coloured gouges. I send for inspection one, marked H, and I had another which I gave away. The Earl of Rosse has one of these.

“ No. 6. The *unfinished* punch or instrument marked J. I had two more of these instruments of a similar shape. They were finished and polished up. They all were of different sizes.

“ No. 7. Gold-coloured ornaments or terminations for pom-

mels of skeynes. I had two or three of these, but I cannot now find any of them. One specimen I remember to have given away. They were about an inch and a half in length, and somewhat of the form of a Norwegian boat or yawl. The drawing I represents both the shape and size of these.

“No. 8. The dagger or knife, with flat handle-socket, marked K. I had one of these which was more perfect in the blade than this specimen is. I gave it away. The knife or instrument marked K 2 was brought to me on Saturday, the 1st September, 1849, by the surviving finder, whose death, Dr. Robinson was led to believe, took place two years ago.

“No. 9. Gold-coloured bronze articles, of which I am ignorant of the use. They appear as if intended for feet to something. I possessed two or three of them, but I cannot now find one. I presented one of them, together with some others of the articles mentioned in this paper, to the Marquis of Normanby, when Lord Lieutenant of Ireland. He had them removed to England. They were all alike in size, and are correctly figured in the drawing L, which, being copied from a sketch made by me with a view to publication, while the originals were in my hands, I can vouch as a faithful representation, and as being of the same size with the originals.

“No. 10. A strap of gold-coloured bronze, ornamented with flutings, and having a small hole in the end of it, seemingly intended for the purpose of passing a thong through, in order to fasten it to something else. It resembles a mutilated portion of the chin-stay of a military headpiece.

“No. 11. Gold-coloured horns or trumpets. I have had in my possession many of these which were found at Dowris. Some of them had lateral mouth-pieces.

“I must, however, remark, that I never saw one of this form put together with rivets, as described by Dr. Robinson (Proceedings R. I. A., vol. iv. p. 239). Having minutely

examined all the bronze horns in the Earl of Rosse's collection, I have no hesitation in asserting that not even a single one of them was united with rivets. Some of them present at a distant view, to a superficial observer, the appearance of having been riveted; but, on closer examination, such appearance turns out to be nothing more than a mere nail-head ornament running along the sides or around the wider aperture of the horn. It is quite clear that the entire horn was, with its nail-head ornaments, made at a single casting. I send for inspection two specimens of this description of ornamented horn, marked N and N 2, found at Dowris, and belonging to my own collection.

"To two of the horns in Lord Rosse's possession additions have been annexed, not by riveting, but by a more remarkable process, that which is technically termed 'burning.' This mode of uniting metals is, I believe, reckoned now of rather modern invention. It is effected by pouring melting metal at a glowing temperature upon the junction of the two pieces intended to be united, and by that means fusing the entire into one mass.

"No. 12. Gold-coloured pear and spherical-shaped crotals or bells. These form the subject of curious and interesting study. I send a specimen of the spherical-shaped (marked O) from my own collection, and would send some of the pear-shaped, but I am aware there are some of them already in the museum of the Royal Irish Academy.

"No. 13. A variety of gold-coloured celts of different sizes. Mr. Donovan, the able chemist, has kindly analysed one of these celts for me. He found it composed of copper, 85.232; tin, 13.112; lead, 1.142; sulphur, carbon, &c., 0.150; and loss, but partially accounted for, 0.642 in every 100. I would be guilty of an injustice did I not here return thanks to my scientific friend, Mr. Donovan, for the public service his labours in that analysis have rendered.

No. 14. Gold-coloured hatchets. One of these (marked S)

was for some time immersed in a brassfounder's pickle before I heard of it. The pickle deprived it of the enamel, but it exhibits the natural golden hue of the metal ; and is curious for the manner in which the handle must have been affixed to it. The broken hatchet (marked T) shows the fine edge this sort of metal was capable of receiving.

“ No. 15. Gold-coloured spear-heads of various kinds, from the large war-spear to the small one used for hunting. Some of these are in my collection. I send the javelin-head, marked U, for inspection, although it was not found at Dowris, because it is remarkable as being barbed. I purchased this specimen some years ago, at an auction of the effects of the late Edmund Molony, of Clonoony Castle, in the King's County. The barbs render it, I believe, unique. They seem to have been affixed with white solder, but they undoubtedly are of the same metal with the remainder of the weapon. The monarch Crimthan, who died A. D. 79, is said to have brought to his palace at Howth, from a foreign expedition, a lance so contrived that a person wounded by it could not recover. The spear-head now exhibited appears well suited to effect an equally deadly result, for it is probable that the barbs would become detached, and remain in any wound inflicted by it.

“ No. 16. Two *unfinished* globular bells. These were broken by the finders, for the purpose, as one of them informed me, of trying what was within it. These crotals are marked X and Y, and they furnish important evidence of the country in which all the articles found along with them were manufactured. These are also composed of the gold-coloured metal.

“ No. 17. A number of small pieces of rub-stone, having convex, concave, and flat surfaces, to suit the form of the various implements to be polished and finished up with them. Some of these pieces, marked Z, Z 2, and Z 3, are exhibited.

“ No. 18. Some of the waste gold-coloured metal which remained after the operation of casting. It is marked A a, and evidently fell in a state of fusion against the side of one of the

spherical-shaped crotals, of which it bears a concave impression. A portion of this waste metal, analysed by Mr. O'Sullivan, gave copper, 88·924; tin, 11·066, traces of lead, iron, and silver, and loss, 0·010 to 100 grains.

“No. 19. Some other things made of the gold-coloured metal were also found at Dowris at the same time with these already detailed. One of the men privy to the discovery recently told me that a sort of chopper was amongst the number of things found. The handle of it was about twelve inches long, and, as he described it, was of a piece with the head. The whole instrument, he says, resembled a butcher's cleaver, but that there was a sort of arm which projected from the back of the head and had a ring in the end of it. I could not learn what became of this antique. It is worthy of note, that in the representation of the death of Hugh de Lacy, carved on one of the compartments of the large stone cross at Durrow, in the King's County, the person by whose hand he fell holds a cleaver somewhat resembling that just described, but without the ring or connecting arm. The button sent was, with several of a similar sort, also found here. It seems to be composed of a different quality of metal from most of the other articles discovered in this place.

“It is with great diffidence in my own slender sources of information that I venture to dissent from any opinion expressed by the reverend and learned divine who has had the merit of formally bringing the circumstances connected with the finding of the Dowris relics under the notice of the Royal Irish Academy. Nevertheless I cannot agree with him in thinking that these highly wrought and curious crotals could ever have been intended as appendages to sheep or oxen, for the purpose of announcing their ‘locus in quo’ in the dense forests which then overspread the face of the country. These crotals, with their numerous engrailed or fluted ornamental rings, were finished too elaborately for such a rude purpose; and metal, such as that of which they are composed, was at that

time too much prized to be employed in such a pastoral use. Besides this, the crotals were not sufficiently sonorous to be audible at a few yards' distance, even in a silent chamber. How, then, could they be heard at the most moderate distance in the open air, and in a country obstructed by forest trees, and thickly entangled underwood? He who takes the trouble to shake one of the pear-shaped crotals belonging to the Academy, or the spherical-shaped one from my collection, now exhibited, must admit their inutility as instruments of sound. Moreover, I believe that if the people of this island had in former times been in the habit of appending such bells to the necks of sheep or cattle, the bells would have been common; and thence arises the question, if they were so common, why is it that none of them have been found elsewhere than at Dowris? Why is it that such bells have never been discovered *sparsim*, or by separate specimens, but that all that have been hitherto found have been met with together, and along with a great variety of other articles? It must also be borne in mind, that, notwithstanding the numerous notices of tribute of sheep and cattle mentioned in almost every page of the Book of Rights, a solitary expression is not to be found which could lead to the belief that any sort of bells were appended to the subjects of such tribute. On the contrary, we must presume, that if bells had been so used, they would not have been omitted in the record; for, in some parts of the same book, brass chains are mentioned as being upon the necks of the animals sent in payment.

"I apprehend, that Dr. Robinson has, in strictness, inaccurately described the Dowris crotals as having loose *clappers*. They each merely contain a single and very small detached piece of metal, somewhat in the manner of a modern sheep-bell. But a modern sheep-bell emits a loud sound when compared with the feeble tinkling of these ancient crotals.

"The cause of tenuity of sound in the Dowris crotals is obvious. In the first place, they were formed of a rather soft

and flexible metal, which, unlike to our modern bell-metal, could be bent to a considerable extent without breaking. In addition to the defect just mentioned, was another, and perhaps a greater impediment to sonorousness, arising from the mode of construction. These Dowris crotals are very inartificially formed as instruments for the propagation of sound. They are either hollow pears or hollow spheres, without any aperture, saving (and that only in some few specimens) two small slits in opposite points, through which passed a bar, whereon the core was supported during the operation of casting. Even these small openings were intentionally and carefully hammered, or otherwise closed in, after the core had been extracted. Some of the specimens which have the slits open seem to be in that state solely in consequence of the accidental breaking of the metal in the act of being hammered in.

“The foregoing reasons seem to prove that the Dowris crotals never were intended for any use requiring the emission of sound audible beyond a very narrow limit indeed. It may reasonably be asked here, could an artificer, so skilful as the Dowris bronze founder, have been ignorant that crotals constructed as his were could not yield a loud sound? It appears to me to be next to impossible that he could have been so, and he must have formed them with some other view. I am, therefore, induced to suppose these crotals were employed solely in some religious ceremonies.

“Ledwich (*Antiquities*, p. 251) tells us that the bell-crotal was used by the pagan Roman priests; and Walker (*Memoirs of the Irish Bards*, p. 93) says: ‘Small bells, such, we mean, as were appended to the tunic of the Jewish high priest, and afterwards employed by the Greeks and Romans for various religious purposes, but particularly to frighten ghosts and demons from their temples, were undoubtedly introduced with Christianity into this kingdom.’ I apprehend, notwithstanding the respectable authority of Mr. Walker, that it is assigning by far too modern a date to the use of bells

in Ireland to couple it with the introduction of Christianity. Lucretius (lib. ii.) furnishes an instance of the use made of bell-cymbals by the Romans in their religious ceremonies. Virgil (Georg. iv.), and Juvenal (Sat. 6), ‘Tot tintinnabula dicas pulsari,’ refer to similar usage. Potter (Antiquities, vol. ii.) mentions that the ancient Greeks, at the moment of a dying person’s soul separating from the body, beat brazen kettles to drive away evil spirits.

“While I suppose that the Dowris crotals have been manufactured for Druidic purposes, I am not ignorant that a learned and justly esteemed antiquary, to whose opinion the greatest deference is due, believes them to have been intended for suspension from the trappings of steeds employed in war. Such an opinion, deduced from ancient sculptures, seems to me to be strongly supported by a passage in the prophecy of Zacharias. The words of the prophet alluded to are: ‘In that day there shall be upon the bells of the horses, holiness unto the Lord.’ The word used in the original may mean either bells or bridles; and while the authorized version of the Church of England adopts the translation ‘bells,’ it places the word ‘bridles’ in a marginal note. The vulgate renders it more generally by ‘quod super frenum equi est,’ and the Rheims Roman Catholic English Bible adopts the term ‘bridle.’

“Notwithstanding the silence of these crotals, they, nevertheless, might have been appended as ornaments to horse trappings, as were the still more dumb stones known by the name of *cruan*. These were attached to the bridles. In the Book of Rights (Income of Uladh) we meet

Fíchi ppian, ppeaéach, potal,
do chpuan.

The laborious and learned O’Donovan, to whom Irish literature is so much indebted, says, in a note to this passage, that ‘Cpuan was a stone of a red and yellow colour.’ It was, in fact, a kind of cornelian or agate. I send for inspection some

stones which were probably once affixed to bridles. They are marked R, and are from my own collection.

“ Having now gone *seriatim* through the several bronze antiques found at Dowris, as far as they have come under my observation, I cannot avoid here expressing my total dissent from the hypothesis that they formed the stock in trade of a travelling Phœnician, or other itinerant foreign merchant, wandering from house to house, and offering these commodities for barter or for sale. If, for the sake of argument, we suppose such a peripatetic dealer to have inadvertently got himself entangled in a quagmire, how could such an accident have compelled him there to abandon his wares altogether? He, at all events, could have removed piecemeal to a firmer footing such portable articles as those found at Dowris. But another question here arises, namely, whether, in fact, any bog whatever existed at Dowris in the remote time when the relics were left there. It is probable, nay, almost certain there was not any bog there then.

“ Dowris, as its name imports (Dúbpop, a dark, dense wood), was originally a thick and extensive forest, and although there is a bog there at present, it was not there many centuries ago. In many parts of Ireland traces of former cultivation, and even houses, have been discovered beneath the bogs. In a paper presented by Mr. King to the Royal Society, and published with Molyneux's *Natural History of Ireland*, the writer says: ‘ There are many bogs of late standing in Ireland. When O'Donnell and Tyrone came to the relief of Kingsale, they wasted the countrie, especially as they came through Conought, which, by the means of the Earl of Clanrickard, was generally loyal, and there is a great tract of ground, *now a bog, that was then plowed land*, and there remains the mansion house of my lord ———, in the midst of it.’ The late Earl of Rosse (then Sir Laurence Parsons) observes: ‘ It is now, indeed, universally admitted that where those immense bogs extend at present there once were culti-

vated plains.' At Dowris the bog abounds in oak and other timber, prostrate beneath the peat. Some of it has the roots charred, which surely could not have been conveniently effected in a wet swamp. The fire must, therefore, have been applied before bog was there. Even in the memory of living persons, that part of Dowris called Derreens, and on which the bronze treasure was found, was covered with copse and underwood.

"Abandoning all theory and speculation bearing on the rapid growth of bog, the fact must be recorded that the Dowris relics were not found in what can be properly denominated bog, but in the centre of a potato garden extending down the slope of a rising ground between the paddock and the moorland. A cock of hay has been left during the last winter between the place of the finding and the bog, so little of wet or quagmire exists there even now.

"One of the reasons assigned for supposing the Dowris antiquities to have been derelict by some travelling foreign merchant, is based on an opinion that Ireland formerly did not produce tin, which metal is said to have entered largely into the composition of ancient bronzes, and certainly was a component part of the articles found at Dowris. Dr. Robinson assures us that he analysed a great variety of bronzes, with such uniform results, that he supposed the identity of composition was evidence of their having all come from the same manufacturers. He, however, states that he afterwards found the peculiar properties of the atomic compound, viz., of 14 equivalents of copper, and one of tin, or nearly 88 of copper to 12 of tin by weight, were sufficiently distinct to make any metallurgist engaged in such a manufacture select it. But it appears that tin did not always enter into the composition of ancient weapons, and that, even when it did, the quantity varied. Thus, M. Hielm found a bronze dagger* to consist of $83\frac{7}{8}$ copper and $16\frac{1}{8}$ tin. An antique sword,

* Dictionary of Chemistry, by Andrew Ure, M.D. (title 'Copper').

found in 1779, in the peat moss of the Somme,* consisted of copper 87·47, and tin 12·53. Of three antique swords† found in the environs of Abbeville, one was found to consist of 85 of copper to 15 of tin; another of 90 of copper to 10 of tin; and the third of 96 of copper to 4 of tin. A fragment of an ancient scythe gave on analysis 92·6 copper, and 7·4 tin. Governor Pownall says, that the swords found at Cannæ, and those found in the bog of Femor in the county of Tipperary, consisted of a mixture of copper, iron, and some zinc.‡ Parkinson's *Memoranda Chemica*, p. 82, informs us, that 'Dr. Pearson, having examined some ancient metallic arms and utensils, was able to ascertain that they consisted of copper and tin, in the proportion of from *six to twelve* parts of copper to *one* of tin, according to the use for which they were intended.' Dr. Pearson's paper is in the *Philosophical Transactions*. The bronze springs for the balistæ, according to Philo of Byzantium, were made of copper 97, tin 3. The specimen of hasta magna, or more probably of a weapon for affixing to the axle of a war chariot, marked B 2, and sent for inspection, is of pure copper, without any admixture of alloy whatever, as are also the hatchets, marked C 2 and C 3. Whoever takes the trouble to look through a promiscuous collection of bronze antiques, will perceive, from the variety of colours, that no certain standard of composition has been adhered to. The golden colour of the Dowris bronzes is almost sufficient to distinguish them from all others; and even these differ amongst themselves; for, according to Mr. Donovan, the celt contains about $13\frac{1}{2}$ of tin to $83\frac{1}{2}$ of copper, with $1\frac{1}{2}$ of lead, and some sulphur and carbon; while the waste metal subjected to Mr. O'Sullivan contained only 11 of tin to 89 of copper, with a mere trace of lead, iron, and silver.

* Dictionary of Arts, &c., by Andrew Ure, M.D.

† Ibid.

‡ Account of some Irish antiquities read before the English Antiquarian Society. Feb. 10, 1774.

“ It probably has been too hastily assumed, that tin was not found formerly in Ireland. The late Earl of Rosse* has argued, that Ireland has at least as good a title to rank under the name of Cassiterides, or Tin Islands, as Britain has. Nennius, no recent authority, bears his testimony, that a mine of tin formerly existed at Killarney. His words are : ‘ Est ibi stagnum quod vocatur Loch Lein quatuor circulis ambitur. Primo circulo gronna stanni ambitur, secundo circulo gronna plumbi, tertio circulo gronna ferri, quarto circulo gronna æris ambitur.’ Smith† says he found, near the Lake of Killarney, an ore which contained tin. The following passage from Adrianus or Hadrianus Junius, known as Adrian, or Junius the Dutchman, shows that he, too, believed Ireland possessed mines of tin. That writer personifies Hibernia as saying :

‘ En ego cum regni sceptro mavortia bello
Pectora et horriferas hominum, nil fingo, figuras,
Qui cursu alipedes norint prævertere cervos,
Dedico, piscosque lacus, volucrumque paludes
Omnigenûm lustris fætâs, *stannique fodinas*,
Et puri argenti venas, quas terra refossis
Visceribus manes imos visura recludit.’

Even Camden,‡ whom O’Flaherty calls ‘ Cæcus Hibernigenis,’ on account of his hostility to this nation, thought these verses worthy of his insertion, and he styles their author ‘ litteratissimus Adrianus Junius.’ Camden, therefore, adds his sanction to the Dutchman’s statement. Macgeoghegan,§ writing on the natural history of the country, has : ‘ Ou y trouve aussi des mines de mercure, *d’etain*,’ &c., for which he quotes Peter Lombard, c. 9. The same writer says elsewhere : ‘ Ayant découvert chez eux de mines d’or,

* Defence of the Ancient History of Ireland.

† History of Kerry, p. 125.

‡ Latin edition, London, A.D. 1600. § Hist. d’Irlande, tom. i. c. 1.

d'argent, d'étain, de plomb, et de fers, ils avoient appris à les fondre et à les fabriquer.' We have it also on the modern authority of Sir Robert Kane,* that tin-stone, which I believe consists of 95 parts of oxide of tin, and 5 parts of oxide of iron, is found disseminated through the auriferous soil of the county of Wicklow in our own day.

Why, then, should it be supposed, in opposition to the authority of ancient writers, backed by tradition, that tin has not been formerly found in Ireland? Why suppose, contrary to the result of modern observation, that tin-stone does not exist in the county of Wicklow in this our own day?

"If it be admitted for argument sake that tin invariably enters into the composition of Irish bronzes, and that no tin mine was anciently known or worked in this island, surely such an admission by no means involves a concession that there was not plenty of that metal in this country in remote times. What was there to prevent a people, accustomed from such early times to making distant voyages, from visiting the neighbouring coast of Cornwall, the site of the stannaries, and importing plenty of tin from thence? In fact, Cornwall, stretching, as it does, into the junction of the Irish and British Channels, must have often interrupted their naval excursions, and attracted their attention, whether they would or not.

"It seems to me that there exists but little cause for hesitating to conclude that the various bronze articles found at Dowris were not left there by a Phœnician, or other itinerant merchant. There are cogent reasons for believing that these interesting antiques were manufactured on the spot by some metallurgist who established his foundry there. Accordingly we observe amongst the things discovered three vessels, some of which bear the marks of having been used, old, worn, and repeatedly repaired. We observe also some of the spherical-

* Industrial Resources of Ireland.

shaped crotals, and some other articles in the rough state after being cast. The unfinished bells sent for inspection, and marked X and Y, yet contain a portion of the core, which renders unnecessary any conjecture as to the substance such core was composed of. It seems to have been a composition of tough clay and sand. The amorphous lump of metal, marked A a, also bears testimony that the place where it was found was the workshop of a manufacturer. What travelling merchant would encumber himself by carrying about with him the residue of the contents of the crucible? If we suppose him to have done so, we must at the same instant admit that he carried it for sale to some person capable of forming it into some more useful shape.

“ I must not here omit noticing the rub-stones which were found. They, too, point out that the whole belonged to a resident operative rather than to an itinerant merchant. In fine, the great quantity of things found, their variety, their being in an unfinished as well as in a finished state, the amorphous mass of spare metal, and the rub-stones, all tend to the conclusion that Dowris was the site of a manufactory of bronze utensils. A farther and remarkable proof of the existence of a foundry where these relics were found is added by the luxuriance of the vegetable matter on the spot. When the field was first shown to me, I, without further information, led those that accompanied me to the particular part of it. I was right in my conjecture, which was confirmed by the man already written of, who was privy to the finding. Charcoal must have been much used in combining the copper with zinc or tin; and carbon being an ingredient entering largely into the composition of vegetables, and also serving as a stimulant to their growth, the grass and weeds on the site of the foundry were marked by a vegetation exceeding in rankness that on any other part of the field.

“ The golden colour of the Dowris bronze is very remarkable. The ancient Romans were acquainted with a kind of

brass, which, from its great resemblance to gold in colour, they denominated orichalch, or orichalcum. Some say this alloy, which had copper for its basis, was made by throwing cadmium or calamine on the copper which absorbed it. Others suppose there was an original natural ore of orichalcum. Be this as it may, it is certain that the Greeks, too, were acquainted with a metallic substance called orichalcum, even before Rome was founded. When Julius Cæsar plundered the capitol of a large quantity of gold, he replaced it with orichalcum, to deceive the people; and Vitellius resorted to a similar expedient when he despoiled the temples of their ornaments.

“ In whatever manner the golden hue was originally given to the Dowris alloy, there is little doubt but that the colour on the exterior of the bronzes has been mellowed by their having long lain buried in the ground. Time and the effect of the soil have produced a varnish defying modern imitation.”

JANUARY 14TH, 1850.

REV. HUMPHREY LLOYD, D. D., PRESIDENT,
in the Chair.

CHARLES GEORGE FAIRFIELD, Esq.; Chichester Samuel Fortescue, Esq., M. P.; Charles Fox, Esq.; Alexander Gordon Melville, M. D.; Christopher Moore, Esq.; and Wellington A. Purdon, Esq.; were elected Members of the Academy.

The Secretary, for James Westby, Esq., of High Park, exhibited an ancient model in wood, of a sword, found at Ballykillmurry, county Wicklow, and communicated the following notice of its discovery, drawn up by that gentleman.